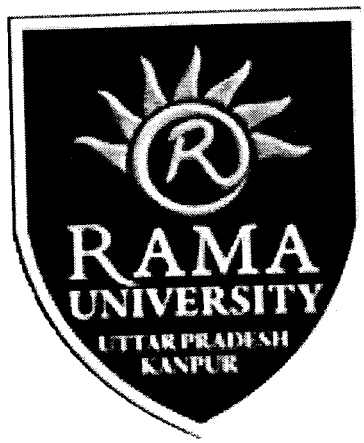
Rama University Uttar Pradesh, **Kanpur**
Faculty of Engineering & Technology

Minutes of Meeting

Bachelor of Technology
(Computer Science & Engineering)



FACULTY OF ENGINEERING & TECHNOLOGY

RAMA UNIVERSITY, UTTAR PRADESH, KANPUR

Website: www.ramauniversity.ac.in

Rama University Uttar Pradesh, Kanpur
Faculty of Engineering & Technology

Ref: RU/FET/CSE/BOS/2016/001 **Dated: 26-May-2016**

Faculty of Engineering & Technology
Department of Computer Science & Engineering
Minutes of Meeting
Boards of Studies

A meeting of Boards of Studies of Computer Science & Engineering (B. Tech) held on 26-May-2016 in Director Office. The following members were present:

1. Dr. Vivek Srivastava - Chairperson
2. Mr. Sarvesh Kumar - Member
3. Mr. Somendra Tripathi - Member
4. Ms. Neelu Kushwaha - Member

The following members agreed to review the minutes in Delhi.

1. Dr. Amod Tiwari - External Member
2. Mr. Vishal Nagar - External Member

Agenda:

1. Action Taken Report (ATR) on the basis of feedback from Stack holder/External member.

The BOS committee confirmed the minutes of the BOS meeting held on 26-May-2016

2. To consider and approve changes in the Evaluation Scheme and Syllabus.

S. No.	Item No.	Existing		Recommendation /Action Taken
1	RU/FET/CSE/ BOS/2016/001	**The Subject code and Syllabus of the following from the existing Evaluation Scheme and Syllabus as**		The BOS considered changes in the Evaluation Scheme and Syllabus and thereafter discussion, recommended such changes in Evaluation Scheme and Syllabus
		Existing	**Proposed**	
		Semester III :		
		BCS-351: Web technology	BEC-358: Logic Design Lab	
		BCS-353: Logic Design Lab	BCS-351: Data structures Lab	
		BEC-358: Data structures Lab	BCS-353: Web technology	
		Semester IV :		
		BCS -402: Advance Computer Organization & Architecture	BCS -402: Computer Organization & Design	

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3. Question Paper Format

4. Any other issue with the permission of the Chair: ----

The meeting concluded with a vote of thanks to the chair.

Date of the Next Meeting: to be decided and conveyed later

Chairperson

Signature: .....

Name : Dr. Vivek Srivastava

Date :

Internal Members

Signature: 1..... 2.....

Name: Mr. Sarvesh Kumar Mr. Somendra Tripathi

Date:

Signature: 3.....

Name: Ms. Neelu Kushwaha

Date:

External Members

Signature: 1..... 2.....

Name: Dr. Amod Tiwari Mr. Vishal Nagar

Date:

Encl.: Recommended Curricula attached for consideration and approval.

CC:

1. Dean

2. Registrar Office

Rama University Uttar Pradesh, Kanpur
Faculty of Engineering & Technology

Program Educational Objectives

At Rama University Computer Science and Engineering program will prepare its graduates to:

PEO 1: Work productively as successful Computer professionals in diverse career paths including supportive and leadership roles on multidisciplinary teams or be active in higher studies,

PEO 2: Communicate effectively, recognize and incorporate societal needs and constraints in their professional endeavors, and practice their profession with high regard to ethical responsibilities,

PEO 3: Engage in life-long learning and to remain current in their profession to foster personal and organizational growth.

Program Specific Outcomes

- Apply standard Software Engineering practices and strategies in real-time software project development using open-source programming environment or commercial environment to deliver a quality product for the organization success
- Design and develop computer programs/computer-based systems in the areas related to algorithms, networking, web design, cloud computing, IoT, AI and data analytics of varying complexity
- Acquaint with the contemporary trends in industrial/research settings and thereby innovate novel solutions to existing problems

Program Outcomes:

PO1 - Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2 - Problem analysis: Identity, formulates, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3 - Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4 - Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of the information to provide valid conclusions.

Sarvesh

PO5 - Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6 - The engineer and society: Apply to reason informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7 - Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8 - Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9 - Individual and teamwork: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10 - Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11 - Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12 - Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Rama University Uttar Pradesh, Kanpur
Faculty of Engineering & Technology

Study & Evaluation Scheme

Bachelor of Technology
(Computer Science & Engineering)

[Applicable w.e.f. Academic Session 2016-17 till Revised]

FACULTY OF ENGINEERING & TECHNOLOGY

RAMA UNIVERSITY, UTTAR PRADESH, KANPUR

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Faculty of Engineering & Technology

Course Detail and Evaluation Scheme

B. Tech. Second Year (Computer Science & Engineering)

(Effective from the session 2016-17)

SEMESTER-III

S.N.	Subject Code	Subject Name	Period			Evaluation Scheme			Subject Total	Credit
			L	T	P	CE	MTE	ETE		
Theory subjects										
1	BEC-301	Digital Logic Design	3	1	0	20	20	60	100	4
2	BAS-301	Mathematics-III	3	1	0	20	20	60	100	4
3	BCS-301	Data Structures Using C	3	1	0	20	20	60	100	4
4	BCS-302	Discrete Mathematical Structures	3	1	0	20	20	60	100	4
5	BCS-303	Web technology	3	1	0	20	20	60	100	4
PRACTICALS / PROJECT										
6	BEC-358	Logic Design Lab	0	0	2	30	20	50	100	1
7	BCS-351	Data structures Lab	0	0	3	30	20	50	100	1
8	BCS-353	Web technology Lab	0	0	2	30	20	50	100	1
9	BCS-352	Numerical Techniques Lab	0	0	2	30	20	50	100	1
		Total	**15**	**5**	**9**	**220**	**180**	**500**	**900**	**24**

BHU-001 Human Values & Professional Ethics (Audit Course)- Student can clear from 2nd year to final year

L-Lecture, T-Tutorial, P- Practical, CE- Continuous Evaluation, MTE-Mid Term Examination, ETE-End Term Examination

Evaluation Scheme:

- **Course without practical components**

For Continuous Evaluation (CE) is such as: 20 Marks

- Attendance: 5 Marks
- Assignments/Quiz / Seminar/Term paper /Project :15Marks

MTE - Mid Term Examination: 20 Marks

- First Mid Term Examination: 10 marks
- Second Mid Term Examination: 10 marks

ETE - End Term Examination: 60 Marks

- **Course with practical components only**

For Continuous Evaluation (CE) is such as: 30 Marks

Conduct / Perform/Execution /Practical File/ Viva-Voice

MTE - Mid Term Examination: 20 Marks

- First Mid Term Examination: 10 marks
- Second Mid Term Examination: 10 marks

ETE - End Term Examination: 50 Marks

Chairperson

Signature: .....

Name: Dr. Vivek Srivastava

Date:

Internal Members

Signature:

1..... 2.....

Name: Mr. Sarvesh Kumar Mr. Somendra Tripathi

Date:

Signature: 3.....

Name: Ms. Neelu Kushwaha

Date:

External Members

Signature:

1..... 2.....

Name: Dr. Amod Tiwari Mr. Vishal Nagar

Date:

Rama University Uttar Pradesh, Kanpur

Faculty of Engineering & Technology

Course Detail and Evaluation Scheme

B. Tech. Second Year (Computer Science & Engineering)

(Effective from the session 2016-17)

SEMESTER-IV

S.N.	Subject Code	Subject Name	Period			Evaluation Scheme			Total	Credit
			L	T	P	CE	MTE	ETE		
Theory Subjects										
1	BCS -041 To BCS -045	Departmental Elective-I	3	1	0	20	20	60	100	4
2	BCS -401	Software Engineering	3	1	0	20	20	60	100	4
3	BCS -402	Computer Organization & Design	3	1	0	20	20	60	100	4
4	BCS -403	Database Management Systems	3	1	0	20	20	60	100	4
5	BCS -404	Theory of Automata & Formal Languages	3	1	0	20	20	60	100	4
PRACTICALS / PROJECT										
6	BCS -451	Software Engineering Lab	0	0	2	30	20	50	100	1
7	BCS -452	Computer Organization Lab	0	0	2	30	20	50	100	1
8	BCS -453	DBMS Lab	0	0	3	30	20	50	100	1
	BCS-454	Principal of Programming Language	0	0	2	30	20	50	100	1
		Total	**15**	**4**	**9**	**220**	**180**	**500**	**900**	**24**

BHU-001 Human Values & Professional Ethics (Audit Course) - Student can clear from 2nd year to final year

L-Lecture, T-Tutorial, P- Practical, CE- Continuous Evaluation, MTE-Mid Term Examination, ETE-End Term Examination.

Evaluation Scheme:

- **Course without practical component**

For Continuous Evaluation (CE) is such as: 20 Marks

Attendance: 5 Marks

Assignments/Quiz / Seminar/Term paper /Project :15Marks

MTE - Mid Term Examination: 20 Marks

First Mid Term Examination: 10 marks

Second Mid Term Examination: 10 marks

ETE - End Term Examination: 60 Marks

- **Course with practical components only**

For Continuous Evaluation (CE) is such as: 30 Marks

Conduct / Perform/Execution /Practical File/ Viva-Voice

MTE - Mid Term Examination: 20 Marks

First Mid Term Examination: 10 marks

Second Mid Term Examination: 10 marks

ETE - End Term Examination: 50 Marks

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Name: Dr. Amod Tiwari Mr. Vishal Nagar

Date:

BEC-358: Logic Design Lab

Credit-1

L	T	P
0	0	2

Content:

1. Introduction to digital electronics lab- nomenclature of digital ICs, specifications, study of the data sheet, concept of V_{cc} and ground, verification of the truth tables of logic gates using TTL ICs.
2. Implementation of the given Boolean function using logic gates in both SOP and POS forms.
3. Verification of state tables of RS, JK, T and D flip-flops using NAND & NOR gates.
4. Implementation and verification of Decoder/De-multiplexer and Encoder using logic gates.
5. Implementation of 4x1 multiplexer using logic gates.
6. Implementation of 4-bit parallel adder using 7483 IC.
7. Design, and verify the 4-bit synchronous counter.
8. Design, and verify the 4-bit asynchronous counter.
9. Mini Project.

Rama University Uttar Pradesh, Kanpur
Faculty of Engineering & Technology
BCS-351: Data Structure Lab

Credit-1

L	T	P
0	0	3

Content:

Write Program in C or C++ for following.

- Array implementation of Stack, Queue, Circular Queue, List.
- Implementation of Stack, Queue, Circular Queue, List using Dynamic Memory Allocation.
- Implementation of Tree Structures, Binary Tree, Tree Traversal, Binary Search Tree, Insertion and Deletion in BST.
- Implementation of Searching and Sorting Algorithms.
- Graph Implementation, BFS, DFS, Min. cost spanning tree, shortest path algorithm
- To write programs implementing Sorting programs: Bubble sort, Merge sort, Insertion sort,
- Selection sort, and Quick sort.
- To write programs implementing Searching programs: Linear Search, Binary Search.
- To write programs Array implementation of Stack, Queue, Circular Queue, Linked List.
- To write programs implementing Stack, Queue, Circular Queue, Linked List using dynamic memory allocation.
- To write program implementing Binary tree.
- To write programs implementing Tree Traversals (pre-order, in-order, post-order).
- To write programs implementing graph traversal (BFS, DFS).
- To write programs implementing minimum cost spanning tree, shortest path

Rama University Uttar Pradesh, Kanpur
Faculty of Engineering & Technology
BES-353: Web Technology Lab

Credit-1

L	T	P
0	0	2

Content:

EXPERIMENTS:

1. Create a web page with the following using HTML
   - i) To embed an image map in a web page
   - ii) To fix the hot spots
   - iii) Show all the related information when the hot spots are clicked.
2. Create a web page with all types of Cascading style sheets.
3. Client Side Scripts for Validating Web Form Controls using DHTML
4. Write programs in Java to create applets incorporating the following features:
   - Create a color palette with matrix of buttons
   - Set background and foreground of the control text area by selecting a color from color palette.
   - In order to select Foreground or background use check box control as radio buttons
   - To set background images
5. Write programs in Java using Servlets:
   - To invoke servlets from HTML forms
   - To invoke servlets from Applets
6. Write programs in Java to create three-tier applications using JSP and Databases
   - for conducting on-line examination.
   - for displaying student mark list. Assume that student information is available in a database which has been stored in a database server.
7. Programs using XML - Schema - XSLT/XSL
8. Programs using AJAX
9. Consider a case where we have two web Services- an airline service and a travel agent and the travel agent is searching for an airline. Implement this scenario using Web Services and Database.
10. To write a program to use JDBC connectivity program for maintaining database by sending queries.

To write a program in XML for creation of DTD which specifies a particular set of rules?

11. To create a Style sheet in CSS/XSL and display the document in Web Browser.
12. To write a Java Servlet for HTTP Proxy Server.

Rama University Uttar Pradesh, Kanpur
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BCS-402: Computer Organization &Design

Credit-4

L	T	P
3	1	0

Content:

Unit-I **08 Hours**

Introduction: Number representation; fixed and floating point number representation, IEEE standard for floating point representation. Error detection and correction codes: Hamming code. Digital computer generation, computer types and classifications, functional units and their interconnections, buses, bus architecture, types of buses and bus arbitration. Register, bus and memory transfer.

Unit-II **08 Hours**

Central Processing Unit: Addition and subtraction of signed numbers look ahead carry adders. Multiplication: Signed operand multiplication, Booths algorithm and array multiplier. Division and logic operations. Floating point arithmetic operation Processor organization, general registers organization, stack organization and addressing modes.

Unit-III **08 Hours**

Control Unit: Instruction types, formats, instruction cycles and sub cycles (fetch and execute etc) , micro-operations, execution of a complete instruction.

Hardwire and micro programmed control: microprogramming sequencing, wide branch addressing, and microinstruction with next address field, pre-fetching microinstructions, concept of horizontal and vertical microprogramming.

Unit-IV **08 Hours**

Input / Output: Peripheral devices, I/O interface, I/O ports, Interrupts: interrupt hardware, types of interrupts and exceptions.

Modes of Data Transfer: Programmed I/O, interrupt initiated I/O and Direct Memory Access. I/O channels and processors.

Serial Communication: Synchronous & asynchronous communication, standard communication interfaces.

Unit-V **08 Hours**

Memory: Basic concept and hierarchy, semiconductor RAM memories, 2D & 2 1/2D memory organization. ROM memories.

Cache Memories: concept and design issues 9 performance, address mapping and replacement)

Auxiliary Memories: magnetic disk, magnetic tape and optical disks Virtual memory: concept implementation.

Text Books:

- Patterson, Computer Organisation and Design, Elsevier Pub. 2009
- William Stalling, " Computer Organization", PHI
- Vravice, Hamacher & Zaky, "Computer Organization", TMH
- Mano," Computer System Architecture", PHI

Reference Books:

- John P Hays, " Computer Organization", McGraw Hill
- Tannenbaum," Structured Computer Organization', PHI
- P Pal chaudhry, ' Computer Organization & Design', PHI

Chairperson

Signature: .....

Name: Dr. Vivek Srivastava

Date:

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